RESPONSES TO COMMENTS

DRAFT PHASE I RFI/RI WORK PLAN
INSIDE BUILDING CLOSURES
OPERABLE UNIT 15

U.S. DEPARTMENT OF ENERGY

MAY 1992

COLORADO
DEPARTMENT
OF HEALTH

ROY ROMER
Governor

PATRICIA A. NOLAN, MD, MPH
Executive Director

Hazardous Materials and Waste Management Division
4210 East 11th Avenue
Denver, Colorado 80220-3716
(303) 331-4830 / FAX (303) 331-4401

Telefax Numbers:
Main Building, Denver
(303) 322-9076

Ptarmigan Place, Denver
(303) 320-1529

First National Bank Building, Denver
(303) 355-6559

Grand Junction Office
(303) 248-7198

Pueblo Office
(719) 543-8441

August 28, 1992

Mr. Frazer Lockhart
U. S. Department of Energy
Rocky Flats Plant
Building 116
P. O. Box 928
Golden, CO 80402

RE: DRAFT, PHASE I RFI/RI WORK PLAN, INSIDE BUILDING CLOSURES (OPERABLE UNIT 15), U. S. DEPARTMENT OF ENERGY, MAY 1992

Dear Mr. Lockhart,

The Colorado Department of Health, Hazardous Materials and Waste Management Division (the Division) and the U. S. Environmental Protection Agency (EPA) have reviewed the subject document submitted by DOE and prime contractor, EG&G. The Division's comments, as well as those of EPA and its contractor (PRC), are attached.

While the work plan as presently written presents a mostly adequate framework, it is inadequate in several respects. The Division believes that the Field Sampling Plan does not fully address the minimum requirements for the OU-15 RFI/RI report as outlined in the IAG Statement of Work:

1. Characterize the nature, rate of transport and extent of contamination.
2. Define pathways and methods of migration.
3. Identify areas threatened by releases from the facility.
4. Determine short- and long-term threats to human health and the environment.

In particular, the sampling outlined in the FSP cannot provide sufficient information to define the extent of contamination beyond IHSS boundaries. Also, a staged plan is mentioned, but not fully developed to allow for contingency and flexibility. Several sampling and monitoring procedures need to be generated.

The RCRA clean closure standard along with occupational radiation standards will be established as ARARs for OU-15. Therefore, the Benchmark tables and the associated discussion will not apply.

A Human Health Risk Assessment will be required only if radionuclide contamination is documented at any of the IHSSs. This risk assessment will consider industrial/occupational future uses with RFP workers and visitors as the potential receptors.

In the Division's August 6, 1992 letter to DOE, the integration of the RFI/RI and Closure was clarified. The Division proposed one comprehensive RFI/RI phase rather than dividing the project into the usual Phase I and II efforts. If remedial action is determined to be necessary after evaluating the Final RFI/RI Report, an IM/IRA will be issued. If no action is needed, closure requirements will be satisfied by a ROD/CAD. The Closure Plans originally submitted to the Division will no longer be required.

If you have any questions concerning these comments, please contact Carl Spreng of the Division at 331-4457 or Dave Maxwell of EPA at 293-1082.

Sincerely,

Gary W. Baughman
Chief, Facilities Section
Hazardous Waste Control Program

Attachments

cc: Daniel S. Miller, AGO
Martin Hestmark, EPA
Jen Pepe, DOE
Farrel Hobbs, EG&G
Dennis Schubbee, EG&G
Jackie Berardini, CDH-OE

Colorado Department of Health

Hazardous Materials & Waste Management Division

Comments

on

DRAFT

PHASE I RFI/RI WORK PLAN

FOR

OU-15

(Inside Building Closures)

ROCKY FLATS PLANT

May, 1992

==========

Executive Summary: The first paragraph on page ES-2 should be restated to reflect recent clarifications by the Division and EPA on the status of IHSS 212 (Unit 63) and IHSS 215. The following wording is suggested:

> IHSSs 212 and 215 were originally included in the IAG as inside building closures in OU-15. IHSS 212 (RCRA Unit 63) is an interim status drum storage area that was included in the 1988 RCRA Part B TRU Mixed Waste Permit Application. At that time, it was intended that Unit 63 be closed under RCRA and reopened as a laboratory. Since then, DOE has decided to continue using the unit for container storage. Unit 63 will be removed from the OU-15 schedules of the IAG and will not be addressed in this Work Plan. The unit was submitted in the Mixed Residues permit modification. Part VIII of the permit will include closure plans for Unit 63, which will specifically address radioactive contamination and cleanup. IHSS 215 is an out-of-service tank (Tank T-40), which has already been included in the Phase I RFI/RI for OU-9 (Original Process Waste Lines). It was moved from OU-15 to OU-9 in a Modification to Work of the IAG dated April 21, 1992.

Section 1.3.3.3: At the end of the final sentence of the second paragraph of page 1-11, confirm that "stability", rather than instability, is the correct term.

Section 1.3.3.7: Compare the use of the term "conformably" to describe the Arapahoe-Laramie contact with Figure 4-2 of the Phase II Geologic Characterization Data Acquisition (EG&E, 1992) which shows an unconformable contact.

Figure 1-5: Contacts between Rocky Flats Alluvium and the Arapahoe Formation, and between the Arapahoe Formation and the Laramie Formation are shown as straight lines (conformable) in the "Formation" column of the Stratigraphic Section. Compare this with Figure 4-2 of the Phase II Geologic Characterization Data Acquisition (EG&G, 1992).

Section 2.2.6: At the end of the first paragraph on page 2-13 the drain and waste lines for the cyanide treatment process are mentioned. These lines are not covered in this OU or in OU-9, but apparently are covered by UBC-881, a Potential Area of Concern that deals with possible contamination under Building 881. Please confirm that these waste lines are included in this UBC.

Section 2.3.2.2: First paragraph on page 2-22. See comments for Section 1.3.3.7 above.

Section 2.5: Under Release Mechanisms on page 2-29, secondary release mechanisms are described as releasing "contaminants from environmental media." This contradicts the description in Section 2.5.2 and the Conceptual Model Flow Chart (Figure 2-6) which describe secondary release mechanisms as acting within buildings.

Section 2.5.1.2: Eliminate the words "with cyanide" from the end of the final sentence in the first paragraph of page 2-32.

Section 2.5.3: The second sentence should be revised to explain that potential human receptors can be limited to RFP workers and visitors for consideration of radionuclide exposure. If RCRA hazardous wastes are not detected within the units, then other receptors do not need to be considered. Since no biota are "indigenous to the OU15 environs", eliminate the third sentence and "however" at the beginning of the next sentence.

Figures 2-3 and 2-4: Roads, streams, fences, and buildings are all shown in blue. These maps would be clearer if, as a minimum, the buildings were outlined in black as indicated in the legends.

Figure 2-6: Revise the flow chart to more clearly show the conceptual model described in the text:

1. Identifying the two columns under "Release Mechanisms" as "Primary" and "Secondary" would add clarification.
2. Routing contamination from impacted environmental media back into inside-building pathways is misleading. It may be more appropriate to show a route from the various transport media to the secondary release mechanisms indicating that after transportation, contaminants could be re-released by

those mechanisms.

3. The second paragraph on page 2-33 describes "suspension and/or dissolution in water" as a secondary release mechanism for the Original Uranium Chip Roaster. This mechanism should therefore be added to the flow chart.

4. In section 8.1 on page 8.2, building materials are identified as a "relevant medium." The release mechanism which would likely deliver contaminants into building materials is probably more accurately termed "percolation" rather than "leaching." Once the building materials are contaminated, they would then serve as a secondary source. A "Building Materials" box should therefore be added in the source column under the heading of "Secondary Source." The release mechanism from building materials is "Leaching." From that point, contaminants could be released by the various secondary release mechanisms, transported primarily via water/liquid waste.

An accompanying revised diagram demonstrates these suggested changes.

Section 3.0: Benchmarks will not apply to OU-15. Because this OU involves RCRA closure units, the clean closure standard will be implemented. The following wording is suggested:

> "The IHSSs in OU-15 are RCRA closure units for which clean-closure is anticipated. Therefore, the Clean Closure Performance Standard (Section 265.111 of CHWA) will serve as the Applicable or Relevant and Appropriate Requirement (ARAR) and will be applied during this RFI/RI and any subsequent remedial cleanup. Although this standard is health-based, it is typically applied through decontamination and/or removal of any detectable hazardous waste constituents."

In addition, occupational radiation standards will be applied as ARARs. Guidance on potential ARARs for the remediation of radioactively contaminated sites under CERCLA is available in the *CERCLA Compliance with Other Laws Manual* (EPA, 1989). A discussion of the application of these occupational radiation standards plus a table listing potential ARARs derived from them should be included in Section 3. The remainder of Section 3 as it is presently written, including the Benchmark tables, can be deleted.

Section 4.1.3: The location of the conceptual model mentioned in the first sentence should be Section 2.5. The final sentence states that a discussion of the site-specific conceptual model follows. Please identify where this discussion is located.

Section 4.1.4: On page 4-6, item (1) under Describe Contaminant Fate and Transport, which concerns secondary containment systems, appears to be redundant with respect to item (2) under Characterize Site Physical Features. This list is repeated in Section 7.1.

Section 4.2.4: In reference to the last paragraph on page 4-10, the FSP must also generate "a sufficient amount of valid data" needed to statistically support a health-based risk assessment, if needed. Please verify that the amount and frequency of data are statistically justified.

Section 4.2.4: In the last paragraph on page 4-10, the phrase "a **staged** approach" is preferred to "a **phased** approached."

Section 4.2.5: Add a description of a staged sampling program (see comments for Section 7.0 below).

Section 4.2.5: Please mention what alternative sampling methods were considered.

Section 4.2.6: The referenced section in the first sentence of the first paragraph of page 4-12 should be Section 7.4.

Section 4.2.6: The final sentence of the first paragraph on page 4-12 should be revised to read, "The precision, accuracy, completeness, comparability, and representativeness parameters for all analytical levels are discussed below."

Section 4.2.6: In the third sentence of the third paragraph on page 4-12, the phrase "a **staged** approach" is preferred to "a **phased** approached."

Table 4-1: The final item in the "Data Use" column on page 1, "Environmental Evaluation", should be eliminated since a separate environmental evaluation will not be performed for OU-15.

Section 5.2: Since the final CRP has been released, the first paragraph of the section on page 5.2 should be revised as follows:

"In accordance with the IAG, the RFP **has developed...**"

"The CRP **addresses...**"

Section 5.3: The final sentence on page 5-3 refers to "activities described below...". Either change this phrase to "activities described above...", or identify specifically where this discussion is located.

Section 5.6: Revise the first paragraph of this section to reflect the effects of the comments for Section 8.0.

Section 5.9: On page 55 of Table 5 in the IAG Statement of Work, four specific items are listed as minimum information requirements for the OU-15 Phase I RFI/RI Report:

1. Characterize the nature, rate of transport and extent of contamination,
2. Define pathways and methods of migration,

3. Identify areas threatened by releases from the facility,
4. Determine short- and long-term threats to human health and the environment.

Where these required items are not addressed by the features listed in Section 5.9, please work them into or add them to that list.

Section 5.7.1: Step 6. on page 5-10 describes the development of risk-based remedial action goals. This paragraph should be reflect the clean closure standard as the remedial action goal as described in comments for Section 3.0 above.

Section 5-9: The last paragraph on page 5-15 mentions "a preliminary identification of potential contaminant migration routes..." Preliminary identification took place during preparation for this work plan. The field sampling plan is designed to identify potential contaminant migration routes beyond the "preliminary" level. The second paragraph on page 5-16 should mention that a Human Health Risk Assessment will be performed and be part of the RFI/RI report if radiation levels require it. In the last paragraph on page 5-16, use the phrase "in a technical memorandum" rather than "for Phase II of the RFI/RI."

Figure 6-1: The Task 2 time bar should be extended back to the left to indicate a start date of 05 May 92.

Section 7.0: The Field Sampling Plan needs to be reviewed to consider whether it fully satisfies the following questions:

1. Can it, together with the operating procedures being developed, serve as a field guide, providing clear and detailed instructions to those implementing it?
2. Will it supply the minimum information requirements listed in Table 5 of the IAG Statement of Work (see the comments for Section 5.9 above)? Does it "anticipate investigations beyond the work specified in [Table 5]" as stated in Section VI.B. of the SOW?
3. Does the sampling frequency, amount, types, and methods provide statistically significant figures that can be used in producing a Human Health Risk Assessment, if needed?
4. Is the data sufficient to satisfy closure requirements?

Section 7.1: See comments for Section 4.1.4 above.

Section 7.2: Efforts to locate information about past attempts to clean the IHSS sites should be required in the first paragraph on page 7-4. Such knowledge could be crucial to the sampling plan.

Section 7.2: As noted in the comments for Section 7.3.3 below, a contingency for minor destructive sampling needs to be included in the FSP. The second sentence of the second paragraph on page 7-4 should be rewritten to allow for this contingency.

Section 7.2: Under Sampling Strategy and Rationale on pages 7-6 and 7-7, a staged approach to the FSP is described which divides the identified tasks into three separate steps. The text should make clear that the results of Steps 1 and 2 will help to determine parameters for the subsequent step. This same process should be used within Step 3 so that there is a contingency for additional sampling (sub-steps) from "critical locations" (Section 4.2.5, page 4-13). For example, more sample sites could be added if contamination is identified beyond the IHSS boundaries. "Statistical summary techniques that consider spatial and temporal data distributions" (Section 8.2.2, page 8-7) can be applied to identify additional sampling needs. The need for additional sampling should be proposed in a technical memorandum. It might be appropriate to add a description of this staged approach to Section 4.2.5 as mentioned above.

Section 7.3: This section includes "frequency" in its title, but the number of samples is never addressed. It would be useful to add an estimate of how many samples of each type will be generated by the FSP according to the frequencies specified. These figures could be added to the text or included in Figure 7-2.

Section 7.3.1: "Personal communications with plant operators" is mentioned in the second paragraph on page 7-4 as a source of background data. Personal communication with plant workers might also be considered as a source of additional waste stream identification and characterization information during the RFI/RI.

Section 7.3.2: The first four sentences of the second paragraph on page 7-11 seem appropriate for this section (Step 2 activities). The remainder of this paragraph would more appropriately be placed under Wipe Sampling in Section 7.3.3 (Step 3 activities).

Section 7.3.2: The first paragraph on page 7-12 mentions "applicable DCNs". The preferred and more efficient method for submitting changes or additions to operating procedures that are specific to this OU is by means of operating procedure addenda in Section 11.

Section 7.3.2: The statement on page 7-12 that sampling beyond IHSS boundaries will occur only if "readings above background are detected near the existing boundary of the IHSSs" is too limiting. Potential contaminant pathways have been identified in this work plan and are supposed to be further evaluated during the Phase I RFI/RI field investigation (see item (2) under Describe Contaminant Fate and Transport on pages 4-6 and 7-3, and Step 2 on page 7-7). As discussed at scoping meetings (4/15/92 and 4/20/92), these efforts to identify contaminant pathways should be followed up with a sampling program that targets potentially contaminated areas beyond the IHSS boundaries (e.g., the sump near IHSS 179). A minimum number of initial sampling sites should be identified for the Final Work Plan. The number and locations can be adjusted

according to results of the screening activities in a staged approach as described in the comments to Section 7.2 above. Environmental sampling outside buildings may also be required if sample analyses indicate that contamination has travelled "out the door." Off-site contamination will be included as part of remedial action for a unit if it can be shown to come from the unit.

Section 7.3.3: Noticeably absent from any sampling plans are activities designed to test for contaminants which may have seeped into building materials as described in the conceptual model (Section 2.5.2) and as mentioned under the Human Health Risk Assessment (Section 8.1, page 8-2). A contingency for destructive sampling of building materials (paint/cement chips, coring, etc.) could be added as a sub-stage of Step 3 if contamination is found along pathways likely to allow for leaching to occur. Particular attention should be paid to cracked concrete found during visual inspections.

Section 7.3.3: As mentioned in the Scoping Meeting on 4/20/92, analysis of the drummed waste is not required. If drum sampling is desired, then procedures beginning on page 7-13 should be formalized as EMD Operating Procedures before implementation of the work plan begins. References should be made in this section to the exact locations of these procedures once they are developed.

Section 7.3.3: Wipe sampling procedures on page 7-16 should also be formalized as EMD Operating Procedures before field sampling begins. The first paragraph on page 7-17 mentions that "separate wipe samples will be obtained and analyzed for beryllium." Explain the procedure for obtaining multiple wipe samples from the same surface, either in this paragraph or in the EMD Operating Procedures.

Section 7.3.3: Reference the specific location of the wipe sampling procedures for soot once they are developed. As explained in comments for Section 7.3.2 above, an operating procedure addendum is preferred to a DCN for submitting changes or additions to operating procedures if they are specific to this OU.

Section 7.6: In the second paragraph of this section on page 7-22, describe in detail the procedure for collecting duplicate wipe samples from the same surface, if this procedure is not already covered in the operating procedures being developed.

Section 7.7: Development of Operating Procedures for air quality monitoring must be completed. Add a reference to their specific location in this section.

Section 8.0: As explained in the comments for Section 3.0, the RCRA closure standard that will be applied at OU-15 is risk-based. Since the OU-15 IHSSs are inside buildings, however, it will probably not be necessary to use a risk-based approach. It is,

therefore, unnecessary to perform a Human Health Risk Assessment for RCRA hazardous wastes. If radionuclide contamination is detected at levels exceeding the occupation radiation standards identified in Section 3.0, then a radiation-based risk assessment must be completed.

This entire section must be rewritten to describe the contingency of performing a radiation-based risk assessment rather than a health-based risk assessment for RCRA hazardous waste. This risk assessment will assume RFP workers and visitors as the only potential receptors, as described in Section 2.5.3. References to "fish ingestion and exposures resulting from recreational uses of reservoirs", ground water, surface water, and all other outside-building exposure routes should be eliminated throughout this section. In its August 6, 1992 letter to DOE, the division proposed one comprehensive phase rather than dividing the project into Phase I and II efforts. Therefore, eliminate references to Phase I and II in this section. Other specific comments follow.

Section 8.1: Restate the third and fourth sentences of the second paragraph on page 8-4 to explain that if the clean closure standard is met and radionuclide contamination is below occupational radiation standard thresholds, then a Human Health Risk Assessment will not be performed. In the sixth sentence of the same paragraph, eliminate "soil", so that general exposure pathways are described. The eighth sentence should be modified to explain that the identification of these pathways will occur only if contamination is discovered. In the final sentence, the phrase, "during Phase II" should be replaced with "by additional sampling proposed in a technical memorandum." See the comments for Section 7.2 above.

Section 8.1: Explain what is meant by **partial** Human Health Risk Assessment.

Section 8.2: Section VII.D.1.a of the SOW requires that "a technical memorandum listing the hazardous substances present at each site or OU" be "submitted prior to the required submittal of the Baseline Risk Assessment." Section VIII allows this memorandum to be combined with the other risk assessment components into one consolidated technical memorandum. State somewhere in this section that this requirement will be complied with if contamination is encountered.

Section 8.2.2: Please explain the meaning of the first sentence of the second paragraph on page 8-7 which begins, "Following completion of the Phase I RFI/RI data collection, analysis, and validation...."

Section 8.2.2: Since any contaminants found within buildings are necessarily related to the RFP, eliminate the phrases "or if they are unrelated to the RFP," and "and they appear related to the RFP"

from the second and third sentences of the last paragraph on page 8-7. In this same paragraph, at the top of page 8-8, confirm that "unlikely" rather than "likely" (or "cannot" rather than "can") provides the proper meaning.

Section 8.2.3: Rewrite this section deleting those portions that no longer apply due to the comments concerning ARARs in Section 3.0.

Section 8.3: The last paragraph in this section, on page 8-13, discusses general exposure pathways, then specifically addresses external exposure to radionuclides. Explain what is meant by this exposure route and why it is singled out in this paragraph.

Section 8.3.1: In the fourth sentence of this section, on page 8-13, residential exposure pathways can be deleted from discussion. In Section 2.5.3, all receptors other than RFP workers and visitors were eliminated from the site conceptual model.

Section 8.3.2: The fate and transport mechanisms described in the second sentence of the last paragraph on page 8-14 do not fit the inside-building scenarios described in the site conceptual model. This sentence should be rewritten or eliminated.

Section 8.3.4: The final sentence should be eliminated or modified to explain that the only future use considered by the Human Health Risk Assessment will be industrial/occupational.

Section 8.3.5: Contrary to the last sentence of the first paragraph in this section, the Work Plan described in Section 7.0 emphasizes sampling at the source rather than at any other potential exposure points. As described in the comments for Section 7.3.2 above, contaminant pathways beyond the IHSS boundaries need to be sampled and assessed as well.

Section 8.3.6: It is suggested that the last two paragraphs of this section (bottom of page 8-19 and top page 8-20) be deleted. As explained above, all receptors other than RFP workers and visitors have been eliminated from the site conceptual model.

Section 8.4: Section VII.D.1.c of the SOW requires that "a technical memorandum listing the hazardous substances present at each site or OU" be "submitted prior to the required submittal of the Baseline Risk Assessment." Section VIII allows this memorandum to be combined with the other risk assessment components into one consolidated technical memorandum. State somewhere in this section that this requirement will be complied with, if contamination is encountered.

Section 10.3.2: Table 4-2 mentioned at the end of the second paragraph on page 10-5, does not exist in this work plan.

Section 10.3.6: Justify the statement in this section with Section

7.7 which states that although local monitoring of Respirable Suspended Particles will not be required, "air monitoring will be performed during field activities to ensure that any ongoing building operations or activities do not adversely affect the quality of data obtained during sampling.

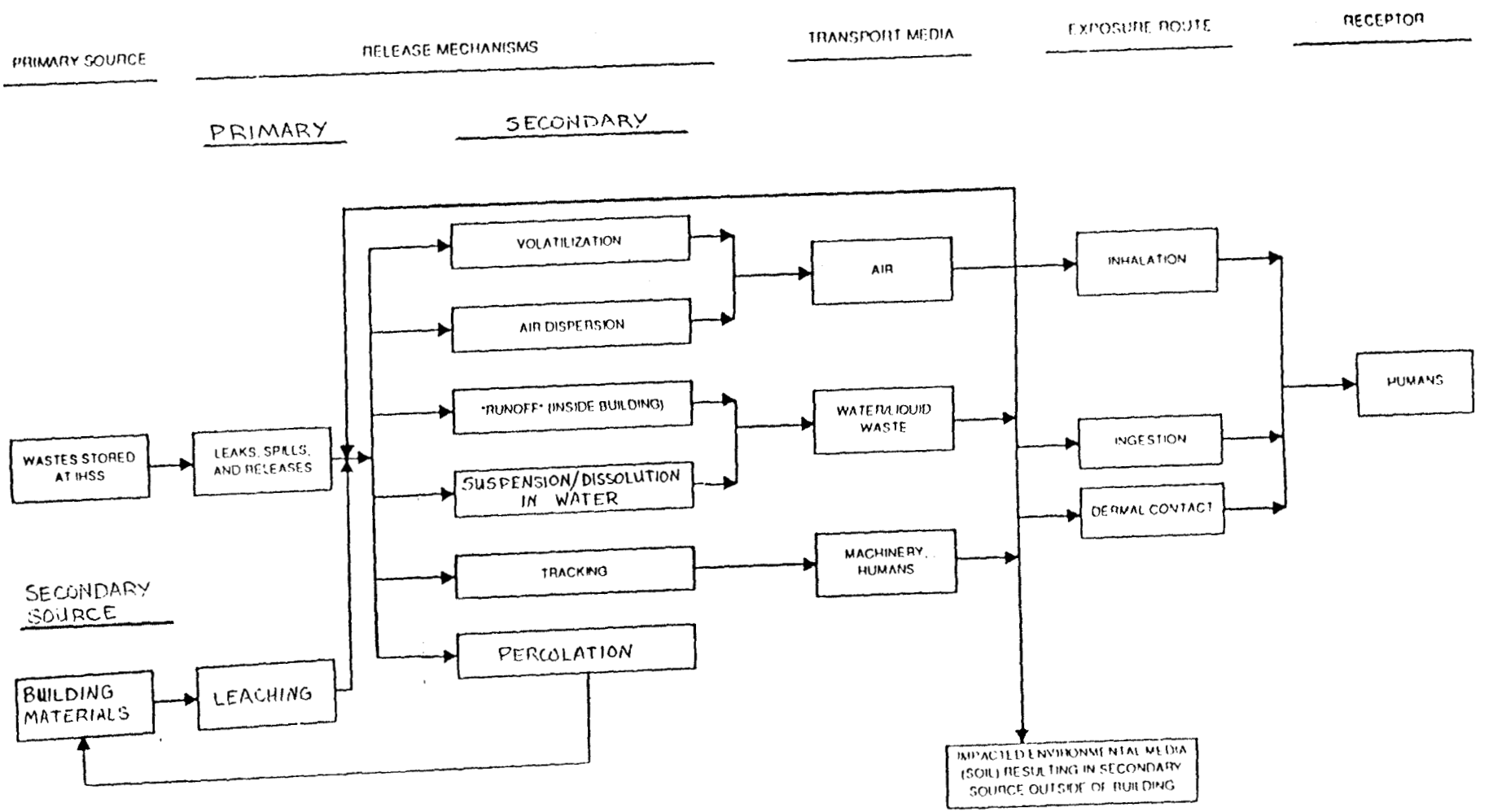
Section 10.5: Please note the following clarifications to the final paragraph in this section on page 10-13:

1. Changes and variances to approved operating procedures are submitted through DCNs, or operating procedure addenda if the changes are specific to OU-15.
2. Changes to the OU-15 work plan should be proposed in Technical Memoranda.

Section 11.0: Operating procedure addenda, if applicable, must be included in the final RFI/RI Work Plan.

REVISED

OU15 CONCEPTUAL MODEL



Conceptual Model Flow Chart for Inside Building Exposure Pathway – OU15, Rocky Flats Plant

Figure 2-6

M53\DES\Concept Model OU15.mdw4-30

EPA Comments on the Draft Phase I RFI/RI Workplan for OU 15, the Inside Building Closure Units

General Comments

Overall, this workplan was found to be adequate and appropriate to characterize OU 15. However, there are some issues and concerns regarding the Field Sampling Plan (FSP) and Human Health Risk Assessment (HHRA) which need to be taken into account when preparing the Final version of the workplan. These are explained below.

The purpose of the FSP is to fully characterize the nature and extent of contamination of each IHSS and to determine and characterize any contaminant pathways and releases from each IHSS. The proposed sampling activities included in this workplan appear to be sufficient to characterize the extent and nature of contamination within each IHSS. However, it is not clear how DOE is planning to determine the existence of possible previous releases and to characterize contamination migration from the IHSSs. EPA recommends DOE first complete the proposed screening activities such as taking a closer look at the historical information, conducting thorough visual inspections, taking wipe samples and performing the radiological surveys. If after completion of these activities there are no indications that releases have occurred or that contaminants could have migrated outside the IHSSs, then it is reasonable to conclude that no subsequent sampling activities are needed external to the IHSSs. In the case that the information gathered shows that a release has occurred and that contaminants could have migrated outside the IHSSs, then DOE must propose further action to the regulatory agencies for consideration and discussion. This can be presented as a Technical Memorandum.

In addition, EPA is concerned that the HPGe detector may not be practicable or appropriate for radiological surveys at these IHSSs which are small areas inside the buildings. DOE needs to explain and include information on the calibration, operation procedures, and type and useability of the data given by the HPGe detector. If it is determined that the HPGe will not provide reliable information or that is not practicable for these IHSSs, then DOE needs to propose other options.

EPA agrees that the Baseline Risk Assessment should only consider performing a HHRA and that the Environmental Evaluation (EE) portion should be excluded. However, it is EPA's position that the HHRA should be performed only if it is determined that there is a source of contamination or if past releases have occurred, and if potential pathways to receptors are identified. In this case, an industrial use scenario should be considered rather than residential scenario due to the fact that we are dealing with contamination inside buildings.

ROCKY FLATS PLANT
GOLDEN, COLORADO
REMEDIAL OVERSIGHT SUPPORT

TECHNICAL REVIEW COMMENTS
DRAFT PHASE I RFI/RI WORK PLAN
OPERABLE UNIT 15, INSIDE BUILDING CLOSURES

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 8, Federal Facilities Remedial Branch
Denver, Colorado

Work Assignment No.	:	C08108
EPA Region	:	8
Site No.	:	CO7890010526
Date Prepared	:	August 14, 1992
Contract No.	:	68-W9-0009
PRC No.	:	012-C08108
Prepared by	:	PRC Environmental Management, Inc. (Terry Ruiter, Susan Turnblom, and Ted Ball)
Telephone No.	:	303/295-1101
EPA Primary Contact	:	Dave Maxwell
Telephone No.	:	303/294-1082

TABLE OF CONTENTS

1.0 INTRODUCTION

PRC Environmental Management Inc. (PRC) has completed a review of the draft Phase I Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI)/Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation (RI) work plan for Rocky Flats Plant (RFP) Operable Unit (OU) 15. This work plan was prepared by the U.S. Department of Energy's (DOE) Environmental Restoration Program in May 1992. The U.S. Environmental Protection Agency (EPA) requested this review under contract 68-W9-0009, Technical Enforcement Support (TES) 12, work assignment C08108.

This review evaluates whether DOE has prepared the work plan following guidelines provided by EPA (1988) and the Interagency Agreement (IAG) (DOE, 1991). General comments refer to the overall organization and quality of the work plan. Specific comments refer to particular text.

2.0 GENERAL COMMENTS

1. This draft work plan for OU15 contains all the elements required by EPA guidance for work plan organization (EPA, 1988). The elements are well organized and contain nearly all of the information required to direct the work proposed for OU15. Improvements to individual sections of the work plan are proposed in the following sections.

2. Section 2.0 (Site Characterization) discusses the individual hazardous substance sites (IHSS) histories, geology, hydrology, nature of contamination, and the site conceptual model. The site conceptual model subsection contains a more extensive discussion relating the conceptual model to the planned risk assessment than has been included in past work plans.

3. Sections 3.0, 4.0, and 5.0 present chemical-specific benchmarks, data quality objectives (DQOs), and RI tasks, respectively. These sections are substantially the same as those presented in previous work plans and contain the required information.

4. Sections 6.0 and 7.0 contain the work plan schedule and field sampling plan, respectively. The schedule presents the IAG dates. The field sampling plan discusses the sampling

approach for each IHSS at OU15. The field sampling plan should contain more details about the use of the high purity germanium (HPGe) detector in the OU15 evaluation. Additionally, provisions should be outlined for obtaining Level III data from contaminated areas identified by the HPGe surveys.

5. Section 8.0 of the OU15 work plan (human health risk assessment ([HHRA]) includes the essential components presented in the Risk Assessment Guidance for Superfund (RAGS) (EPA, 1989a). However, it is inaccurate and incomplete in specific areas (see specific comments). A major omission is that future land use assumptions have not been adequately defined, and therefore exposure scenarios cannot be rigorously assessed.

   The section discussing the specific criteria to select contaminants of concern (COCs) requires revision. The criteria proposed for selecting potential COCs in the HHRA do not correspond to those endorsed by the EPA in RAGS (1989a). In its current form, human carcinogens and other toxic chemicals could be eliminated from the risk assessment prematurely.

6. Section 9.0 contains the environmental evaluation. As noted in the work plan, the OU15 IHSSs are located inside buildings within the RFP industrialized area. The areas around the outside of buildings will be included in the OU9 ecological studies. Therefore, this approach should adequately evaluate the situation at OU15 so that a separate ecological study will not be required.

3.0 SPECIFIC COMMENTS

1. Section 2.3.3.1, Page 2-24, Paragraph 4. This paragraph states that surface water drainage patterns appear on Figure 1-2. This should be Figure 2-1. Furthermore, drainages and ditches should be labeled on this figure. Drainage away from the buildings of OU15 should also be shown on this figure.

   Rationale: The correct figure numbers should be cited. This figure should identify the drainages and drainage directions discussed in the text.

2. Section 2.5.4, Page 2-35. This section summarizes exposure pathways and states that the listed pathways are derived from Figure 2-6. However, no pathways are listed in this section. The missing material needed to complete this section should be added.

   Rationale: This section is incomplete as written.

3. Table 4-1. This table presents DQOs for OU15. From the way the table is organized, the HPGe survey data apparently will be used in the baseline risk assessment. Because these are only Level II data, they should not be used for risk assessment purposes. This table should be clarified.

   Rationale: Only Level III, IV, or V data should be used for risk assessment purposes.

4. Section 7.2, Page 7-5, Paragraph 2. This paragraph discusses detection limits and states that they appear in Table 7-1. For radionuclides, Table 7-1 only presents detection limits for wet chemical methods in conjunction with alpha spectrometry. Because the radionuclides will be monitored using the HPGe detector, some discussion of the HPGe system capabilities should be included in this paragraph and detection limits should appear in Table 7-1.

   Rationale: The HPGe surveys will be important parts of the proposed work. Therefore, they should be described in more detail.

5. Section 7.2, Page 7-7, Bullet 2. This section describes field screening activities and states that this will include Level II data. Because this level of data is not usable in risk assessments, the field sampling plan should include provisions for Level III sampling using the HPGe system in areas determined to be radioactively contaminated.

Rationale: Level III data or higher will be needed in areas of radioactive contamination to perform the risk assessment.

6. Section 7.3.2, Page 7-11, Paragraph 2. This paragraph discusses the radiation surveys at OU15. From this discussion, it is unclear exactly how the fixed versus removable radioactive contamination will be differentiated. Some discussion should be added to clarify this point. It is also unclear how the wiping to be done for the removable versus fixed radionuclides will affect wipe sampling for volatile organic compounds (VOCs) and metals. This should be discussed in this paragraph.

Rationale: These procedures are critical to the completion of the proposed work. They should be discussed in detail.

7. Section 7.4.1, Page 7-18. This section discusses sample designations; however, it does not include any discussion of how HPGe results will be recorded or stored. Because these data will characterize each IHSS, they should be compiled in a standard manner. Some discussion of the fate of HPGe data should be added to this section.

Rationale: The HPGe results will characterize OU15 in terms of radioactive contamination and should be catalogued.

8. Figure 8-1, Human Health Risk Assessment. The fourth bullet in the box entitled "Exposure Assessment", which reads "estimate exposure pathways", should be deleted or clarified.

Rationale: As currently written, the bulleted item does not describe a meaningful step in the exposure assessment process.

9. Table 8-1, Page 1 of 2. Health Effects Assessment Summary Tables (HEAST) is no longer updated quarterly. It is published annually and only contains toxicity values for chemicals not provided in Integrated Risk Information System (IRIS). The HEAST description should be updated.

Rationale: The information is out of date.

10. Table 8-1, Page 1 of 2, Bullet 8. The date for the (SPHEM) is shown as 1988. This should be changed to 1986. As stated, this is not the current program risk assessment guidance manual. Page xv of the preface to RAGS (Part A) states that, "The Human Health Evaluation Manual (HHEM) replaces a previous EPA guidance document, The Superfund Public Health Evaluation Manual (October 1986), which should no longer be used."

Rationale: The information is incorrect and out of date.

11. Table 8-1, Page 2 of 2, Fourth Bullet. The guidance document titled Guidance for Data Useability in Risk Assessment denoted here as "interim final" has now been finalized. The new title is Guidance for Data Useability in Risk Assessment (Part A), Publication 9285.7-09A. This final version supersedes the interim final document referenced in Table 8-1. Part B of the Guidance for Data Usability in Risk Assessment, which will address the usability of radionanalytical data for baseline HHRAs, is scheduled for publication in fiscal year 1992.

Rationale: The information is incorrect and out of date. Current guidance documents should be referenced so that the HHRA can be as accurate and scientifically defensible as possible.

12. Table 8-1. The table should reference the HHEM, Supplemental Guidance: Standard Default Exposure Factors, OSWER Directive 9285.6-03 dated March 25, 1991.

Rationale: The reference list is incomplete.

13. Section 8.1, Page 8-4, Third Paragraph. Reference is made in the last sentence to a "partial Human Health Risk Assessment." This term is unclear and should be explained.

Rationale: The term "partial human health risk assessment" is not conventional, therefore, it should be defined.

14. Section 8.2.2, Page 8-6. The first sentence of this section refers to 1990 guidance on data usability for HHRAs that has been updated. This section should cite the current guidance as a reference (EPA, 1992).

Rationale: The information in the work plan is out of date. Current guidance documents should be used so that the HHRA can be as accurate and scientifically defensible as possible.

15. Section 8.2.2, Page 8-7, First Full Paragraph. The first sentence states, "Following completion of the Phase I RFI/RI data collection, analysis, and validation, new data will be evaluated to determine if the Phase I RFI/RI data that can be used to support a quantitative Human Health Risk Assessment will be identified." This sentence does not make sense and should be rewritten for clarity.

Rationale: It is important that the work plan discuss the relationship between historical data and new data and how they will be used together.

16. Section 8.2.2, Page 8-8. The last sentence at the top of the page states, "It is unlikely that risks resulting from exposure to tentatively identified compounds (TICs) cannot be characterized at this time because of the absence of specific contaminant identity and available toxicological information." This sentence is confusing and should be clarified.

Rationale: The double negative "unlikely...cannot" indicates that risk from TICs can be characterized, and this is not likely.

17. Section 8.2.2, Pages 8-7 and 8-8, Second Paragraph. The paragraph discusses TICs and how they will relate to the HHRA. It states that "if only a few TICs are reported relative to other contaminants, or if they are unrelated to RFP, they will be excluded from the HHRA." This discussion is premature. All contaminants detected at least once should be included in the HHRA in the section containing a data summary of chemicals detected in each medium.

Decisions regarding the frequency of detection and the relationship of chemicals to the site should not be made at this time. These decisions must be deferred until COCs are selected. During this time, chemicals detected less than a pre-established frequency of detection benchmark, usually set at 5 percent, can be eliminated from the risk assessment.

Furthermore, chemicals lacking toxicity values should not be unilaterally excluded from the risk assessment before EPA Region 8 toxicologists are notified. If it is not possible to derive toxicity values for particular chemicals, a qualitative discussion of potential adverse effects is required.

Rationale: COCs should be selected in strict accordance with the guidelines presented in RAGS. Rationale for any deviations from this guidance should be documented and detailed.

18. Section 8.2.3, Page 8-10, Second Paragraph. While it may be appropriate to eventually reduce the number of chemicals carried through the risk assessment process, the Environmental Evaluation Manual (EPA, 1989b) is not the appropriate guidance manual to use for this process in a HHRA. EPA (1989a) discusses in Chapter 5 the use of a concentration-toxicity screening in addition to other considerations.

Rationale: The title of this section is "Human Health Risk Assessment Plan," and the procedures presented should be appropriate and applicable to HHRAs since there are differences between human health risks and ecological effects.

19. Section 8.2.3, Page 8-11. The list of applicable or relevant and appropriate requirements (ARARs) should include the Safe Drinking Water Act (SDWA) maximum contaminant levels (MCLs) and any other promulgated requirements.

Rationale: The list of ARARs should be comprehensive.

20. Section 8.2.3, Page 8-11. The text is not clear as to how the comparison with ARARs will affect the selection of COCs. Even though a chemical concentration is below an MCL, for example, it does not necessarily indicate that it should not be carried through the risk

assessment process. For instance, the cancer risk at the established MCL for arsenic is 1 X 10^{-3}.

Rationale: ARAR's relationship to COC selection should be clear.

21. Section 8.3.1 on Page 8-13, and Section 8.3.4 on Page 8-16. The fourth sentence indicates that "residential and occupational exposure pathways through ingestion, inhalation or dermal contact with site-related contaminants will be considered for evaluation..." Exposure scenarios should include current and future industrial/occupational exposures, unless contaminants breach the existing structures or the OU boundary.

Rationale: The proposed land use scenarios should include present and future potential receptors.

22. Section 8.3.5, Page 8-17. The second paragraph discusses reasonable maximum exposure (RME) concentrations and determining the appropriateness of geometric or arithmetic means to estimate the RME concentrations. The Supplemental Guidance to RAGS; Calculating the Concentration Term, EPA Publication 9285.7-081, May 1992, should be consulted when making this determination.

Rationale: Current guidance should be used so that the HHRA can be as accurate and scientifically defensible as possible.

23. Section 8.3.6, Page 8-18, Third Paragraph. The citation for the Standard Default Exposure Factors guidance document should be corrected to EPA, 1991.

Rationale: EPA, 1989c is the wrong citation for a March 25, 1991 document.

24. Section 8.3.6, Page 8-19. The second paragraph states that dermal exposures will be calculated and compared with those calculated for ingestion, but does not state how the dermal exposures will be calculated. This information should be provided, and the interim dermal exposure guidance should be referenced (EPA, 1992c).

Rationale: The text should include information on how dermal exposures will be estimated and whether reference doses and slope factors will be adjusted.

25. Section 8.4, Page 8-22, First Paragraph. Since IRIS is an on-line database, the citation in the text for 1987b is inappropriate. IRIS should be consulted every time a risk assessment is prepared. IRIS files from 1987 are likely to be out-of-date.

Rationale: Current guidance should be used so that the HHRA can be as accurate and scientifically defensible as possible.

26. Section 8.4, Page 8-22. This section discusses sources of toxicity values. This discussion should also include contacting EPA's Environmental Criteria and Assessment Office (ECAO) for chemicals with no verified toxicity values.

Rationale: Current EPA guidance (EPA, 1989a) recommends contacting the ECAO if IRIS and HEAST do not provide toxicity values for COCs.

4.0 REFERENCES

DOE, 1991, United States Department of Energy, Federal Facility Agreement and Consent Order (Interagency Agreement [IAG]: DOE, EPA, CDH), Washington, D.C. January 22, 1991.

EPA, 1988, United States Environmental Protection Agency, Interim Final, Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Washington, D.C., EPA/540/8-89/004, OSWER Directive 9355.3.01, October 1988.

EPA, 1989a. Risk Assessment Guidance for Superfund, Volume 1 – Human Health Evaluation Manual (Part A). Interim Final. EPA/540/1-89/002. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C.

EPA, 1989b. Risk Assessment Guidance for Superfund, Volume 2 – Environmental Evaluation Manual. Interim Final. EPA/540/1-89/001A. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C.

EPA, 1990. Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities. Proposed Rule. Federal Register 55: 30798-30884. July 27, 1990.

EPA, 1991. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. OSWER Directive 9285.6-03. March 25, 1991. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency and Response, Washington, D.C.

EPA, 1992a. Guidance for Data Useability in Risk Assessment (Part A). Publication 9285.7-09A. May 1992. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency and Response, Washington, D.C.

EPA, 1992b. Supplemental Guidance to RAGS: Calculating the Concentration Term. Publication 9285.7-08I. May 1992. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency and Response, Washington, D.C.

EPA, 1992c. Dermal Exposure Assessment: Principles and Applications. Interim Report. EPA/600/8-91/011B. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, D.C.

RESPONSES TO COLORADO DEPARTMENT OF HEALTH COMMENTS

DRAFT PHASE I RFI/RI WORK PLAN INSIDE BUILDING CLOSURES OPERABLE UNIT 15

U.S. DEPARTMENT OF ENERGY

MAY 1992

Responses CDH Comments

Executive Summary:	The document has been modified as requested.
Section 1.3.3.3:	Stability is the term used in Volume 2 of 3, B-1-9, Paragraph 3, Sentence 2 of the referenced document (U.S. DOE, 1980).
Section 1.3.3.7:	The document has been modified as requested to indicate that the Arapahoe-Laramie contact is unconformable.
Figure 1-5:	The figure has been modified to indicate an unconformable contact between the Rocky Flats Alluvium, the Arapahoe Formation, and the Laramie Formation.
Section 2.2.6:	The drain and waste lines are covered by UBC-881, a Potential Area of Concern that deals with possible contamination under Building 881.
Section 2.3.2.2:	The document has been modified as requested.
Section 2.5:	The document has been modified to be consistent with Section 2.5.2 and Figure 2-6.
Section 2.5.1.2:	The document has been modified as requested.
Section 2.5.3:	The document has been modified as requested to indicate that if IHSS-associated RCRA hazardous wastes are not detected, the Human Health Risk Assessment will be limited to occupational radiological exposure to RFP workers and visitors. The other suggested editorial changes to the third and fourth sentences of Section 2.5.1.2 have been incorporated.
Figures 2-3, 2-4:	The document has been modified as requested.
Figure 2-6:	Figure 2-6 has been modified as requested.
Section 3.0:	The document has been modified as requested. Clean Closure Performance Standards (Section 265.111 of the Colorado Hazardous Waste Act) will serve as the Applicable or Relevant and Appropriate Requirements (ARARs) for OU15.
Section 4.1.3:	The document has been modified as requested.

Section 4.1.4:	The document has been modified as requested. The redundant portions of the text have been removed from Sections 4.1.4 and 7.1.
Section 4.2.4:	The FSP includes a discussion of the quantity of data considered to be sufficient and adequate to meet the data quality objectives for OU15. The number of proposed radiological swipe and survey locations exceeds the industry norm for assessing occupational radiological exposure. Analysis of steam rinsate will be performed up to three times to determine whether residual contaminant concentrations are below the Clean Closure Performance Standards presented in Section 265.111 of the Colorado Hazardous Waste Act.
Section 4.2.4:	The document has been modified as requested.
Section 4.2.5:	A description of the staged sampling program has been added to this section. A detailed discussion of the staged sampling program is provided in Section 7.0 along with a logic flow diagram (Figure 7-1) for the sampling activities.
Section 4.2.5:	The document has been modified as requested to include a discussion of the alternative sampling methods considered for characterization of OU15 IHSSs.
Section 4.2.6:	The document has been modified as requested.
Section 4.2.6:	The document has been modified as requested.
Section 4.2.6:	The document has been modified as requested.
Table 4-1:	The table has been modified as requested.
Section 5.2:	The document has been modified as requested.
Section 5.3:	The document has been modified as requested to indicate "the activities described above".
Section 5.6:	The document has been modified as requested based on recent agency guidance and the subsequent revisions to Section 8.0.
Section 5.9:	The document has been modified, as appropriate, to address the requirements listed in Table 5 on page 55 in the Interagency Agreement (IAG) Statement of Work.

Section 5.7.1:	The document has been modified to indicate that the Clean Closure Performance Standards will serve as the risk-based remedial action goals for OU15.
Section 5-9:	The document has been modified as requested. The staged approach for identifying and characterizing potential contaminant migration pathways is discussed in Section 7.0.
Figure 6-1:	Figure 6-1 has been modified as requested.
Section 7.0:	Section 7.0 has been revised in response to agency comments and satisfies the questions asked by CDH regarding the Field Sampling Plan for OU15.
Section 7.1:	The document has been modified as requested. See response to CDH comment on Section 4.1.4 above.
Section 7.2:	Information regarding previous attempts to clean the OU15 IHSSs was not available at the time of preparation of the work plan. The Field Sampling Plan (FSP) has been designed based on all available information. Should this type of information become available prior to implementation of the FSP, it is acknowledged that modifications to the FSP may be required.
Section 7.2:	The issue of destructive sampling was discussed and resolved during a meeting with all members of the IAG held on September 24, 1992. Destructive sampling will not be performed because of (1) the potential for release of radiological contamination during sampling and (2) because standard sampling methods for these materials have not been formalized and therefore the data are difficult to interpret. The purpose of destructive sampling was to evaluate contaminant migration pathways such as cracks. Instead of destructive sampling, EG&G and DOE propose to visually locate and document such pathways and to assume that contaminants have indeed migrated along the pathways. CDH agreed to this approach.
Section 7.2:	Section 7.2 has been revised as requested. The revised section includes a logic flow diagram relating the sampling activities, a technical memorandum describing additional sampling activities if an investigation of environmental media outside the building is required, and the baseline risk assessment activities. The text has been revised to include a discussion of the elements of the FSP.

Section 7.3:	See response to comment 4.2.4.
Section 7.3.1:	EG&G and DOE concur. All available waste stream identification and characterization information will be considered for use in the RFI/RI.
Section 7.3.2:	EG&G and DOE concur. However, due to the reorganization of this entire section, this comment is no longer applicable.
Section 7.3.2:	Any changes, modifications, or deviations to approved operating procedures, either prior to or during field implementation, that are necessary to successfully complete the intended task will be documented by completing and submitting a Document Change Notice (DCN) in accordance with the requirements of Section 5.0 of the Quality Assurance Project Plan (QAPjP).
Section 7.3.2:	The revised FSP includes a three-stage approach to characterize: (1) contaminate within each IHSS and at its perimeter, (2) potential migration pathways to areas outside of the buildings, and (3) impacted environmental media. The number and locations of proposed sampling sites may be adjusted on the basis of the field screening activities. If IHSS-associated contaminants have been released outside of the buildings, environmental sampling will be proposed in a technical memorandum.
Section 7.3.3:	See response to CDH comment on Section 7.0 above.
Section 7.3.3:	EG&G and DOE concur. Therefore, references to sampling of drummed wastes have been removed from the document.
Section 7.3.3:	Swipe sampling procedures have already been formalized in the Environmental Management Radiological Guidelines Manual No. 3-21000-OPS-EMRG as EMRG 3.1, Performance of Surface Contamination Surveys.
Section 7.3.3:	Because it is unlikely that soot is present at this IHSS, it is not necessary to develop a standard operating procedure for sampling this material. Instead, swipe sampling will be performed. The document has been modified to reflect this change in sampling. Swipe sampling will be done in accordance with EMRG 3.1, Performance of Surface Contamination Surveys.
Section 7.6:	Duplicate radiological swipe samples cannot be collected from the same surface. The document has been modified to explain

	the procedure for obtaining a swipe sample as presented in EMRG 3.1, Performance of Surface Contamination Surveys. Within each square meter of surface, a 100 square centimeter swipe sample is obtained. Using this procedure, it is possible to obtain multiple swipe samples within each square meter "sample location".
Section 7.7:	Air monitoring has been removed from Section 7.7 due to changes in the field sampling plan which do not require air monitoring to be conducted. Activities within the building which may affect the quality of data will be halted during implementation of OU15 sampling.
Section 8.0:	As requested, the document has been modified to reflect recent agency guidance regarding the scope of the Baseline Risk Assessment.
Section 8.1:	The document has been modified as requested.
Section 8.1:	The word "partial" has been removed from the text.
Section 8.2:	The document has been modified as requested.
Section 8.2.2:	This sentence has been removed from the revised version of the document. Therefore, the comment is no longer applicable.
Section 8.2.2:	The document has been modified as requested.
Section 8.2.3:	The document has been modified as requested.
Section 8.3:	Because the entire Section 8.0 has been completely rewritten in response to recent agency guidance regarding the scope of the Baseline Risk Assessment, this paragraph no longer appears in the document.
Section 8.3.1:	The document has been modified as requested.
Section 8.3.2:	The document has been modified as requested to be consistent with the site conceptual model.
Section 8.3.4:	The document has been modified as requested.
Section 8.3.5	The document has been modified as requested. See responses to CDH comments on Sections 7.2 and 7.3.2.
Section 8.3.6:	The document has been modified as requested.

Section 8.4:	The document has been modified as requested.
Section 10.3.2:	The reference to Table 4-2 has been removed from the text.
Section 10.3.6:	Air monitoring has been removed from Section 7.7 due to changes in the field sampling plan which do not require air monitoring to be conducted. In addition, building activities which may impact the quality of the data obtained during implementation of the field sampling plan will be suspended during sample collection.
Section 10.5:	The clarifications have been made as suggested in the comments.
Section 11.0:	Changes and variances to approved operating procedures for OU-specific work will be submitted as Document Change Notices (DCNs).

RESPONSES TO THE ENVIRONMENTAL PROTECTION AGENCY COMMENTS

DRAFT PHASE I RFI/RI WORK PLAN INSIDE BUILDING CLOSURES OPERABLE UNIT 15

U.S. DEPARTMENT OF ENERGY

MAY 1992

Responses to EPA General Comments

The revised Field Sampling Plan includes a three stage approach to characterize (1) contamination within each IHSS and at its perimeter, (2) potential migration pathways from the IHSS outside of the buildings, and (3) impacted environmental media outside of the buildings. A logic flow diagram (Figure 7-1) is presented to illustrate the relationship of three stages of investigation and the applicable type of risk assessment that may be required. The number and locations of proposed sampling sites may be adjusted on the basis of the field screening and sampling activities. If IHSS-associated contaminants have been released outside of the buildings, environmental sampling will be proposed in a technical memorandum. This memorandum will also discuss ARARs and the scope of the Human Risk Assessment.

The HPGe detector is no longer proposed for investigation of radiological contamination at OU15 IHSSs. Instead, radiological swipe sampling and radiological surveys are proposed. Radiological sampling/surveys will be performed to determine removable radiological contamination (swipe sampling), fixed radiological contamination (beta-survey), and a dose-rate (gamma-survey).

EG&G and DOE concur with the guidance provided by EPA (and CDH) regarding the scope of the Baseline Risk Assessment. An environmental evaluation will not be performed for OU15 because of its industrial setting. Assuming that all of the IHSSs meet the Clean Closure Performance Standards (Section 265.111 of the Colorado Hazardous Waste Act), a Human Health Risk Assessment for hazardous wastes will not be performed. If radiological contamination is present after the IHSSs have been clean closed, a radiological risk assessment will be performed to determine the occupational exposure to RFP workers and visitors.

RESPONSES TO
PRC ENVIRONMENTAL MANAGEMENT, INC.
COMMENTS

DRAFT PHASE I RFI/RI WORK PLAN
INSIDE BUILDING CLOSURES
OPERABLE UNIT 15

U.S. DEPARTMENT OF ENERGY

MAY 1992

Responses to General Comments (GC)

GC-1: No response required.

GC-2: No response required.

GC-3: No response required.

GC-4: The HPGe survey will no longer be used to investigate radiological contamination at OU15. Radiological sampling/surveys will be performed to determine removable radiological contamination (swipe sampling), fixed radiological contamination (beta-survey), and a dose-rate (gamma-survey).

GC-5: Section 8.0 of the OU15 work plan has been completely revised based on recent agency guidance regarding the scope of the Baseline Risk Assessment. Clean Closure Performance Standards (Section 265.111 of the Colorado Hazardous Waste Act) will serve as ARARs for OU15 risk-based remedial actions. Assuming that Clean Closure Performance Standards are met, a Human Health Risk Assessment will not be performed. If residual radiation is still present at an IHSS, a radiological risk assessment will be performed to determine occupational exposure to RFP workers and visitors.

GC-6: No response required.

Responses to Specific Comments (SC)

SC-1: The figure has been modified as requested.

SC-2: The document has been modified to clarify this section. The requested information has been incorporated throughout Section 2.5 without being summarized in Section 2.5.4.

SC-3: The HPGe survey will no longer be used to investigate radiological contamination at OU15. Radiological sampling/surveys will be performed to determine removable radiological contamination (swipe sampling), fixed radiological contamination (beta-survey), and a dose-rate (gamma-survey). The protocol for recording and storing radiological-survey data in the RFEDS database is discussed in Section 7.5.

SC-4: The HPGe survey will no longer be used to investigate radiological contamination at OU15. Therefore, this comment is no longer applicable.

SC-5: See response to comment SC-3 above.

SC-6: The document has been modified to clarify all sampling and survey methods. Concentrations of volatile organics and metals will not be determined by swipe sampling.

SC-7: See response to comment SC-3 above.

SC-8: Figure 8-1 has been removed from the revised document.

SC-9: Because the scope of the OU15 Baseline Risk Assessment has changed in response to recent agency guidance (see response to GC-5 above), the content of Section 8.0 has changed and this comment and other comments below are no longer applicable.

SC-10: See response to comment SC-9 above.

SC-11: See response to comment SC-9 above.

SC-12: See response to comment SC-9 above.

SC-13: See response to comment SC-9 above.

SC-14: See response to comment SC-9 above.

SC-15: See response to comment SC-9 above.

SC-16: See response to comment SC-9 above.

SC-17: See response to comment SC-9 above.

SC-18: See response to comment SC-9 above.

SC-19: See response to comment GC-5 above.

SC-20: See response to comment SC-9 above.

SC-21: See response to comment SC-9 above.

SC-22: See response to comment SC-9 above.

SC-23: See response to comment SC-9 above.

SC-24: See response to comment SC-9 above.

SC-25: See response to comment SC-9 above.

SC-26: See response to comment SC-9 above.

Responses to EPA General Comments

The revised Field Sampling Plan includes a three-stage approach to characterize (1) contamination within each IHSS and at its perimeter, (2) potential migration pathways from the IHSS outside of the buildings, and (3) impacted environmental media outside of the buildings. A logic flow diagram (Figure 7-1) is presented to illustrate the relationship of three stages of investigation and the applicable type of risk assessment that may be required. The number and locations of proposed sampling sites may be adjusted on the basis of the field screening and sampling activities. If IHSS-associated contaminants have been released outside of the buildings, environmental sampling will be proposed in a technical memorandum. This memorandum will also discuss ARARs and the scope of the Human Risk Assessment.

The HPGe detector is no longer proposed for investigation of radiological contamination at OU15 IHSSs. Instead, radiological swipe sampling and radiological surveys are proposed. Radiological sampling/surveys will be performed to determine removable radiological contamination (swipe sampling), fixed radiological contamination (beta-survey), and a dose-rate (gamma-survey).

EG&G and DOE concur with the guidance provided by EPA (and CDH) regarding the scope of the Baseline Risk Assessment. An environmental evaluation will not be performed for OU15 because of its industrial setting. Assuming that all of the IHSSs meet the Clean Closure Performance Standards (Section 265.111 of the Colorado Hazardous Waste Act), a Human Health Risk Assessment for hazardous wastes will not be performed. If radiological contamination is present after the IHSSs have been clean closed, a radiological risk assessment will be performed to determine the occupational exposure to RFP workers and visitors.